U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-257 966

A Health Facilities Plan for Northwest Tennessee

Northwest Tennessee Comprehensive Health Planning Council

Dec 75

PB 257 966

A HEALTH FACILITIES PLAN FOR NORTHWEST TENNESSEE

PREPARED BY
NORTHWEST TENNESSEE COMPREHENSIVE
HEALTH PLANNING COUNCIL

DECEMBER, 1975

This project was supported by the Memphis Regional
Medical Program

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U. S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

BIBLIOGRAPHIC DATA SHEET	1. Report No.	2.	3. Recipient's Accession No. PB-257 966
4. Title and Subtitle A Health Facilities Plan for Northwest Tennessee			5. Report Date Dec 75 6.
7. Author(s)			8. Performing Organization Rept. No.
9. Performing Organization Name and Address Northwest Tennessee Comprehensive Health Planning Council Union City, Tennessee			10. Project/Task/Work Unit No. 11. Contract/Grant No.
12. Sponsoring Organization Name and Address			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstracts

The Northwest Tennessee Comprehensive Health Planning Council is responsible for comprehensive health planning for the nine counties in Northwest Tennessee. Passage of recent state and federal legislation concerning "Certificate of Need" has greatly increased the community's responsibilities toward the development of health faciiities and their services. For this reason, the Northwest Tennessee Health Planning Council has developed A Health Facilities Plan for Northwest Tennessee - December, 1975 to serve as a planning tool with its annual updates to help the Council in its decision-making process. Due to constraints in availability of data and time this document will initially address hospitals and nursing homes.

17. Key Words and Document Analysis. 17a. Descriptors

*Health care facilities,
*Hospitals,
*Nursing homes,

Health care delivery systems,
Comprehensive health planning,
Tennessee,
Regional medical programs,
Objectives,
Health care costs,
Health care requirements,
Health resources,
Demography,
Acute care,
Long term care.

17b. Identifiers/Open-Ended Terms

Senior citizens.

17c. COSATI Field Group 6 E

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
National Technical Information Service Springfield, Virginia 22161	UNCLASSIFIED	75p
	20. Security Class (This Page) UNCLASSIFIED	22. Price 4.50/3.00

PREFACE

The Northwest Tennessee Comprehensive Health Planning Council was organized under the authority of Section 314 (b) of Public Law 89-749 enacted by the 89th Congress. This document is the result of the Northwest Tennessee Comprehensive Health Plan, February, 1975 which set forth to stimulate the development of a Health Facilities Plan to address itself directly to health facility status and needs. Experts were consulted, health planning interns were engaged, and staff personnel were assigned. The Office of Comprehensive Health Planning and Tennessee Department of Public Health supplied guidance throughout the planning endeavor. The Memphis Regional Medical Program supplied the necessary funding. Without the dedication of the committee members and the support of the Memphis Regional Medical Program, this document would not exist.

TABLE OF CONTENTS

		Page
Preface		i
Summary		ii
Part One:	Methodology	1
	Epidemiological Section	3
	Demographic Factors	6
	Health Measures	
	Existing Resources	
	Hospitals	17
	Nursing Homes	27
	Services	19, 30
Part Two:	Bed Need Formulas	31
	Acute Care Formulas	33
	Normile Method	33
	Bed-Population Ratio Method	37
	Advantages & Disadvantages	44
	Long Term Care Formula	45
	Demand Method	47
	Advantages & Disadvantages	50
	Review Criteria	51
	Tennessee Certificate of Need	51
	Northwest Tennessee Comprehensive Health Planning Council Guidelines	53
	Goal & Objectives	55
Conclusion		61

NORTHWEST TENNESSEE COMPREHENSIVE HEALTH PLANNING COUNCIL

1975

Walton Bonds
Chairman

Louise Johnson
Vice-Chairman

Helen McKnight
Secretary-Treasurer

Perry D. Barnes
Taylor Hopper
C. W. Bailey, D.D.S.
Stephen Dare Lee
Hon. Pat Williams
Paris Prince
Steve Johnson
James O. McCord, O.D.
Hon. Edwin Pique
Zane Ragsdale
George L. Culbreath, D.D.S.
Robert E. Clendenin, M.D.

Larry Griffin
Robbins Mitchell
Jerry Cannon
William B. Acree, M.D.
Robert Henley
Jesse Pipkin
Norman Campbell, Ph.D.
Billie Dickerson
Robert Jelks
J. Howard Ragsdale, M.D.
Wade Barton
Robert Curnutte

PLAN DEVELOPMENT COMMITTEE

Donald Finch
Chairman

Wade Barton
J. Howard Ragsdale, M.D.
Jerry Cannon
Betty Rasberry

Louise Johnson
Jesse Pipkin
Fred Allison
Walton Bonds (ex-officio)

MANPOWER COMMITTEE

Norman Campbell, Ph.D.
Chairman

Robert Jelks
Lester Bates

Robert Henley
Billie Dickerson
Walton Bonds (ex-officio)

FACILITIES COMMITTEE

Robert E. Clendenin, M.D.
Chairman

Robbins Mitchell
Norman Campbell, Ph.D.

James H. Donnell, M.D.
Stephen Dare Lee
Walton Bonds (ex-officio)

COUNCIL STAFF

Janet B. Humphreys
Health Planner

Ronald E. Reid
Executive Director

James V. Freeman
Assistant Director

Sherry Bledsoe
Health Planning Secretary

Deborah J. Allen
Executive Secretary

Darcy Jaynes
Health Planning Intern

J. Randal Little
Health Planning Intern

CONSULTANTS

A. Robert Thoeny, Ph.D.
Director
Institute of Governmental
Studies & Research
Memphis State University

John W. Pickering, Ph.D.
Research Associate
Institute of Governmental
Studies & Research
Memphis State University

SUMMARY

The Northwest Tennessee Comprehensive Health Plan, February 1975 is the parent document of this plan. In the original document, broad goals were set that addressed some of the issues in this Health Facilities Plan, December, 1975. These concerns were facilities, cost, and senior citizens. Being an offspring document it is appropriate to indicate the originally determined goals. They are:

FACILITIES GOAL:

To encourage the adequate distribution of health facilities which enable all residents to receive as comprehensive a range of medical services as possible, thus ensuring quality health care throughout the region.

HEALTH COST GOAL:

To ensure all residents that in view of the rising cost of quality health care, methods will be developed which will enable all persons from all levels to be financially equipped to obtain quality health care and health services.

SENIOR CITIZENS HEALTH GOAL:

To elevate the health of senior citizens to an optimum level through fulfilling the medical, social, and nutritional needs of older persons of all income levels.

The Northwest Tennessee Comprehensive Health Planning Council seeks the development of a health system that will assure quality health care to be available and accessible in a manner which assures continuity of care at a reasonable cost for all residents of the region. In trying to succeed in this endeavor, the Council selected goals and objectives which are responsive to the unique needs and resources of the area and which take into account and are consistent with national guidelines for health planning.

The previously stated goals were considered valid, but their consolidation was obtained in order to be effectively responsive to the unique circumstances in the Northwest Tennessee Planning Region. To make broad and specific recommendations concerning the medical needs, one broad goal with several objectives was ascertained. The goal for this Health Facilities Plan is:

TO ENSURE THE AVAILABILITY OF NECESSARY MEDICAL FACILITIES AND SERVICES TO ALL RESIDENTS OF THE REGION AT A REASONABLE COST.

METHODOLOGY PART ONE

INTRODUCTION TO THE HEALTH FACILITIES PLAN

The Northwest Tennessee Comprehensive Health Planning Council is responsible for comprehensive health planning for the nine counties in Northwest Tennessee. Passage of recent state and federal legislation concerning "Certificate of Need" has greatly increased the community's responsibilities toward the development of health facilities and their services. For this reason, the Northwest Tennessee Health Planning Council has developed A Health Facilities Plan for Northwest Tennessee - December, 1975 to serve as a planning tool with its annual updates to help the Council in its decision-making process. Due to constraints in availability of data and time this document will initially address hospitals and nursing homes.

PURPOSES OF THE PLAN

1. To determine the present and future needs for health facilities and their services for a nine county region.
2. To make broad and specific recomendations in regard to supplying the area with the necessary medical services.
3. To serve as a planning tool for the Council concerning facilities and services.
4. To recognize that this Health Facilities Plan is only one facet of planning within a wide spectrum of health

planning concerns.

METHOD OF APPROACH

The method of approach to this Health Facilities Plan is basically goal-oriented planning as demonstrated by the New Jersey Department of Health. A statistical base is developed on the health status of the population. Projections of needs are established along with the desired goals to be reached. The Council has selected a course of action to achieve these goals and established an analysis base to evaluate the progress at a particular time in the future.

EPIDEMIOLOGICAL

SECTION

THE EPIDEMIOLOGY FOR NORTHWEST TENNESSEE

An evaluation of the clustering and density of population throughout the Northwest Tennessee Health Planning Region attempts to identify the significant factors which determine the location and distribution of the spectrum of health services. Before specific characteristics are studied, a planner must recognize the size of the area's total population along with future projections.

TABLE 1

NORTHWEST TENNESSEE PLANNING REGION POPULATIONS
1970-1990

	1970	1974	1980	1990
Region	221,464	228,011	237,832	251,952
Benton	12,126	12,432	12,892	13,739
Carroll	25,741	26,572	27,819	29,630
Crockett	14,402	15,000	15,210	16,128
Dyer	30,427	31,368	32,779	34,428
Gibson	47,871	48,594	49,678	53,707
Henry	23,749	24,276	25,066	26,026
Lake	8,074	8,024	7,948	8,722
Obion	30,247	31,318	32,924	33,982
Weakley	28,827	30,705	33,521	35,596

Source: Tennessee Migration, Population, Families, Income, and Manpower Demand Projections to 1990 for Development Districts and Counties. Tennessee State Planning Office, (July, 1974).

Population projections are an important factor in determining future demand for any service or facility and in estimating, with any accuracy, the future potential consumers in the Northwest Tennessee health delivery system. Problems exist today in the provision of health services because of a failure to plan for population increases and decreases.

TABLE 2

NORTHWEST TENNESSEE POPULATION FOR 65 YEARS AND OVER
1970-1990

Counties	1970		1974		1980		1990	
	Males	Females	Males	Females	Males	Females	Males	Females
Benton	758	906	785	938	961	1211	1078	1559
Carroll	1550	2112	1605	2187	1868	2593	2164	3199
Crockett	898	1126	930	1166	1163	1633	1387	2174
Dyer	1620	2259	1677	2339	1980	3012	2207	3759
Gibson	2584	3552	2676	3781	3004	4503	3578	5775
Henry	1587	2019	1643	2091	1947	2594	2223	3191
Lake	378	493	391	511	495	731	656	1076
Obion	1813	2548	2455	2638	2219	3203	2287	3710
Weakley	1855	2373	1921	2457	2007	2684	2015	2950
Region	13043	17488	14083	18108	15644	18064	17595	27393

Source: Tennessee State Planning Office, Tennessee Migration, Population, Families, and Manpower Demand Projections to 1990 for Development Districts and Counties, (July, 1974).

TABLE 3

65 YEARS AND OVER POPULATION PERCENTAGES
1974

County	Percentage Of Total Population 65 +	Percentage Of Males Not Married	Percentage Of Females Not Married	Percentage Below Poverty Level
Benton	13.6	11	30	50
Carroll	14.2	11	31	48
Crockett	14.1	10	34	51
Dyer	12.6	12	37	52
Gibson	13.0	10	33	52
Henry	15.2	11	32	50
Lake	11.2	12	32	48
Obion	14.1	11	36	46
Weakley	14.6	10	31	51
Region	13.6	11	33	50

Source: U.S. Department of Commerce, Bureau of the Census, 1970 General Population Characteristics.

The University of Tennessee, Center for Business and Economic Research, Tennessee Statistical Abstract 1974, (3rd Edition), Knoxville, TN, 1974.

Specific characteristics of populations give an exact measure of the type of services, facilities and manpower needed in the region. With this information a planner is able to assist health care providers to increase productivity in certain areas of need when such a need is demonstrated. Accordingly, epidemiological rates and ratios point out indicators for which a measure of the population's health status can be obtained.

TABLE 4

POPULATION CHARACTERISTICS
1974

County	Population Per Square Mile	Population Percent Non-White	Percent* Elderly	Percent** Children	Sex*** Ratio
Benton	30.9	3.1	13.6	8.3	95
Carroll	43.2	12.4	14.2	7.4	95
Crockett	53.6	21.4	14.1	7.5	93
Dyer	57.6	13.2	12.6	8.0	91
Gibson	78.9	20.7	13.0	7.8	91
Henry	41.9	13.4	15.2	6.7	92
Lake	48.4	23.4	11.2	9.8	92
Obion	54.4	7.1	14.1	8.0	92
Weakley	51.0	6.3	14.6	6.6	97
Region	51.9	13.3	13.8	7.6	93
State	94.9	16.1	9.7	9.9	94
U.S.	57.0	11.2	9.6	8.6	96

* Elderly means those persons 65 years and over.
** Children means those persons 5 years and under.
*** Sex Ratio is the number of males per 100 females.

Source: The University of Tennessee, Center for Business and Economic Research, Tennessee Statistical Abstract 1974, (3rd Edition), Knoxville, Tennessee, 1974.

TABLE 5
NORTHWEST TENNESSEE BIRTH/DEATH RATES
1972

Type of Event	Number of Events	Rate per 1,000 Live Births
Live Births	68,448	---
Fetal Deaths	927	13.5
Abortions	4,969	72.6
Infant Deaths	635	9.3
Maternal Deaths	18	0.3

Source: Tennessee Department of Public Health, Annual Report of Hospitals and Related Facilities in Tennessee 1972.

TABLE 6
BIRTH/DEATH RATES BY COUNTY
(Per Thousand Population)*
1972

County	Birth Rate		Infant Mortality Rate (1971)		Total Death Rate	
Benton	14.8	(23.6)	17.9	(----)	12.9	(7.9)
Carroll	14.3	(17.7)	11.3	(50.0)	12.0	(12.4)
Crockett	14.6	(22.2)	18.2	(101.0)	10.8	(6.8)
Dyer	15.5	(18.6)	20.7	(11.8)	12.5	(20.6)
Gibson	15.3	(23.7)	8.9	(26.8)	13.3	(13.8)
Henry	14.5	(16.6)	20.6	(14.5)	15.0	(15.0)
Lake	16.5	(23.8)	15.9	(----)	13.3	(8.1)
Obion	16.2	(29.6)	21.0	(37.7)	12.3	(21.1)
Weakley	11.4	(20.2)	13.9	(23.8)	12.1	(11.2)
State	15.2	(22.1)	18.8	(27.4)	9.5	(11.4)
U. S.	17.4	1970 Yr.	21.7	1969 Yr.	9.4	1970 Yr.

* Those figures in parenthesis indicate nonwhite statistics.
---- Those rates are not calculated when the number of births is less than 10....rates not reported.

Source: The University of Tennessee, Center for Business and Economic Research, Tennessee Statistical Abstract 1974, (3rd Edition), Knoxville, Tennessee, 1974, Table 20.7, pp. 669-671.

U.S. Bureau of the Census, Current Population Reports, Series p-26, U.S. Department of Commerce, No. 83, Sept. 1974.

In examining Table 6 one discovers a variety of factors indicating diversities in the health of this region which vary from county to county and within different populations of a single county. The average birth rate for the Northwest Tennessee Region is 14.8 for whites and 21.8 for nonwhites. Of this birth rate indicator, Lake and Obion Counties have the highest birth rates. These rates are higher than the State of Tennessee. Dyer County is the only county which shows a difference in ranking for each population. Its white population ranks third among this region and the nonwhite population ranks seventh.

The infant mortality rate in the region varies with race. For the white population it is an average 16.5, whereas it is an average 37.9 for nonwhites. In most of the counties this difference exists, and in some cases it is more than twice as high. The phenomenon follows for both the State of Tennessee and the United States.

The average death rate for the region is 12.7 for whites and 11.9 for nonwhites. Dyer and Obion counties have the highest total death rate for nonwhites, which is extremely high in comparison to the State of Tennessee and United States death rate figures. Henry County has the highest white death rate (15.0) of the entire region with the rate being two points higher than the next closer rate, but six points higher than the State of Tennessee and United States rates.

These indicators demonstrate a specific level of health factors affecting the entire region.

TABLE 7
NORTHWEST TENNESSEE

Number of Facilities and Beds According to Ownership and Type of Facility, 1974

			OWNERSHIP*		
		Total	State and Local	Non-Profit	Proprietary
Region	Facilities	32	4	1	17
	Beds	2459	1286	48	1125
	Hospitals	11	7	0	4
	Beds	965	746	0	219
	Nursing Homes	21	7	1	13
	Beds	1494	540	48	906

* No Federal facilities in this region.

Source: from unpublished data of the Northwest Tennessee Comprehensive Health Planning Council, The Health Facilities Survey, 1975. November, 1975.

TABLE 8
NORTHWEST TENNESSEE

Number of Facilities and Beds According to Size and Type 1975

		Total	Under 25 Beds	25-49 Beds	50-99 Beds	100-249 Beds
Region	Facilities	32	0	11	13	8
	Beds	2459	0	479	870	1110
	Hospitals	11	0	2	6	3
	Beds	965	0	86	380	499
	Nursing Homes	21	0	9	7	5
	Beds	1494	0	393	490	611

Source: from unpublished data of the Northwest Tennessee Comprehensive Health Planning Council, The Health Facilities Survey, 1975, November, 1975.

TABLE 9
State of Tennessee Utilization of Acute Care Services
According to Size of Short-Term Hospital, 1972

Size of Hospital	Admissions		Beds*	Patient Days	Average Daily Census	Percent Occupancy
	Number	Rate+				
Total	745,686	185.0	19,805	5,692,149	15,595	78.7
Under 25 Beds	6,354	1.6	198	49,094	135	68.2
25-49 Beds	58,688	14.6	1,429	358,944	983	68.8
50-99 Beds	149,147	37.0	3,696	935,635	2,612	70.7
100-249 Beds	144,756	35.9	3,837	998,565	2,736	71.3

+ Rate per 1,000 population
* Corrected figures considering average number of beds available daily.

Source: Tennessee Department of Public Health, Annual Report of Hospitals and Related Facilities in Tennessee 1972,

The percentage of occupancy ranged from 68.2 for the very small hospitals with less than 25 beds to 71.3 for the medium sized hospitals with 200 beds and over. These figures indicate that the larger short-term hospitals are operating at almost full capacity. It is interesting to note that the percentage occupancy for the very small hospitals with less than 25 beds rose sharply over the 1971 figure (from 57.1 per cent to 68.2). This was caused by a rather appreciable decline in the average beds available daily for this year over last year, along with a concomitant increase in average daily census.

Summary data regarding the use of acute care service beds during the past ten years are shown in Table 10. The number of beds per 1,000 population was 4.4 in 1963 and 5.0 in 1972 (a 14 percent increase). Since 1967, the number of admissions has increased steadily, which gave an all-time high rate of 185.0 admissions per 1,000 population. However, there has been very little fluctuation in the percentage occupancy of the hospitals over the decade: the range has been from 79 to 82 percent.

TABLE 10
Utilization of Acute Care Service Beds, Tennessee, 1963-1972

Year	Bed Rate Per 1,000 Population	Admission Rate Per 1,000 Population	Average Length Of Stay	Percentage Occupancy
1963	4.4	164.3	7.6	78.7
1964	4.4	171.5	7.5	80.0
1965	4.5	171.7	7.5	80.0
1966	4.5	169.0	7.7	79.4
1967	4.6	166.4	7.9	79.5
1968	4.7	170.5	8.0	80.2
1969	4.8	169.8	8.2	81.7
1970	4.8	179.3	7.8	81.0
1971	4.9	179.5	7.8	79.3
1972	5.0	185.0	7.6	78.7

Source: Tennessee Department of Public Health, Annual Report of Hospitals and Related Facilities in Tennessee 1972.

The average cost per patient day reported by these hospitals was $74.08 which is up considerably over the figure reported in 1971 ($61.43). During the ten-year period, 1963-1972, the cost per day has increased steadily and for 1972 was nearly three times that for 1963. In fact, the relative increase in reported

average expense per day was similar for each size-category of hospitals over the time period 1963 through 1972. (See Table 12 for data of Northwest Tennessee)

TABLE 11
Average Expenses Per Day for Short-Term Hospitals According to Size of Hospital, Tennessee, 1963-1972

Year	25 Beds	25-49 Beds	50-99 Beds	100-249 Beds
1963	$22.52	$22.73	$26.56	$27.77
1964	23.54	25.08	27.54	29.23
1965	22.68	27.14	30.33	31.38
1966	31.18	31.35	31.62	35.77
1967	41.79	32.64	34.52	41.01
1968	46.86	40.27	39.70	46.73
1969	49.61	45.47	46.36	49.42
1970	50.47	49.53	52.11	61.13
1971	64.22	56.11	57.52	65.53
1972	60.03	71.06	70.06	83.01

Source: Tennessee Department of Public Health, Annual Report of Hospitals and Related Facilities in Tennessee 1972.

The above table gives a general appearance of consistent equal increase in cost for each hospital size; but upon further study, a glaring jump in cost is found. In comparing the hospitals having 100 to 249 beds, the increase in cost is tremendous. The first differentiation comes in 1965 with 28 per cent, whereas the previous year it was only 20 per cent. By 1967, the small hospitals' cost equals that of the larger hospitals; but this lasted only three years. Finally by 1972, the difference in cost for these two hospitals is 28 per cent which is the same percentage as 1965; but the difference in actual dollars is greater. For 1965 the difference was $8.70, whereas for 1975 it is $22.98.

TABLE 12
Average Expenses Per Day of Northwest Tennessee
For Short-Term Hospitals
1974

	Total		State & Local		Proprietary	
	Total	Avg.	Total	Avg.	Total	Avg.
Total	1,094.52	78.18	624.55	89.22	469.97	67.13
Under 25 Beds	0	0	0	0	0	0
25-49 Beds	266.30	88.76	0	0	266.30	88.76
50-99 Beds	489.71	81.61	397.27	99.31	92.44	46.22
100-149 Beds	0	0	0	0	0	0
150-249 Beds	227.28	75.76	0	0	0	0

Federal and Non-profit areas have no beds reporting.

Source: Tennessee Department of Public Health, Annual Report of Hospitals and Related Facilities in Tennessee - 1974.

In reviewing the average cost per day, one obviously notes the steady increase in expenses to hospitals. The Tennessee Department of Public Health reports for the Northwest Tennessee Planning Area the average expenses per day of $73.56 for 1972. The average expenses per day for 1974 is $78.18, a 5.91 per cent increase in only two years. With these cost increases, it is important that health facilities are distributed according to the needs of the community. However, economic viability is always a determing factor. When any facility becomes economically bankrupt, the consumers ultimately suffer by increases in costs.

In the event of bankruptcy, local governments generally assume the deficit which creats an additional burden upon the consumers. Not only do prices increase, but the accessibility to medical care by most sectors of the community decreases.

The following Tables 13 and 14 indicate a trend in hospital beds in general and specialty hospitals for the United States and Northwest Tennessee.

TABLE 13
U.S. Hospital Beds By Type: Selected Years Through 1971
(Per 1,000 Population For U.S.)

Year	Total Hospitals	General Medical Surgical	Total	Psychiatric	Disease	Tuberculosis	Other
1971	7.4	4.9	2.5	2.1	0.1	0.1	0.2
1970	7.6	5.0	2.6	2.2	0.2	0.1	0.2
1969	7.8	5.0	2.9	2.4	0.2	0.1	0.2
1968	7.9	4.7	3.2	2.5	0.2	0.1	0.3
1967	8.3	4.9	3.4	2.8	0.3	0.2	0.2
1963	8.3	4.3	4.0	3.3	0.2	0.3	0.2

Includes eye, ear, nose, and throat hospitals; epileptic hospitals; alcholism hospitals; narcotic hospitals; maternity hospitals; orthopedic hospitals; physical rehabilitation hospitals; and other hospitals.

Source: U.S. Department of Health, Education, and Welfare, Public Health Service, Health Services and Mental Health Administration, National Center for Health Statistics, Health Resources Statistics - Health Manpower and Health Facilities, 1972 - 1973, DHEW Publication No. (HSM) 73-1509, June, 1973.

TABLE 14
Hospital Beds By Type Per 1,000 Population
By Census Region and Division
1971

Region & Division	Total Hospital Beds	Surgical	Total	Psychiatric	Disease	Tuberculosis	Other
United States	7.4	4.9	2.5	2.1	0.1	0.1	0.2
Regions:							
Northwest	8.7	4.8	3.8	3.1	0.3	0.0	0.4
North Central	7.4	5.2	2.2	1.9	0.1	0.1	0.2
South	7.3	5.0	2.3	1.9	0.1	0.2	0.2
West	5.9	4.6	1.3	1.0	0.1	0.0	0.2
South:							
South Atlantic	7.6	4.9	2.7	2.3	0.1	0.2	0.1
East South Central	7.4	5.1	2.3	1.9	0.1	0.2	0.1
West South Central	6.8	5.1	1.7	1.3	0.0	0.1	0.2
Tennessee	7.6	5.3	2.3	1.8	0.2	0.2	0.1
Northwest Tennessee (1975)	4.2	4.2	0.0	0.0	0.0	0.0	0.0

Source: U.S. Department of Health, Education, and Welfare, Public Health Service, Health Services and Mental Health Administration, National Center for Health Statistics, Health Resources Statistics - Health Manpower and Health Facilities, 1972 - 1973, DHEW Publication No. (HSM) 73-1509, June, 1973.

TABLE 15
Average Daily Patients, Admissions and Discharges
For General Hospitals by Census Region & Division
1971

Region and Division	Average Daily Patients	Number per 1,000 Population: Admissions	Discharges
United States	3.8	159.2	159.1
U.S. Regions:			
Northeast	3.9	142.7	142.6
North Central	3.9	162.0	161.8
South	3.8	169.3	169.2
West	3.3	159.8	159.9
U.S. Region - South:			
South Atlantic	3.8	160.9	160.9
East South Central	4.0	177.8	177.5
West South Central	3.7	176.8	176.8
Tennessee	4.2	181.8	181.7
Northwest Tennessee (1975)	2.9	157.5	152.2

Source: U.S. Department of Health, Education, and Welfare, Public Health Service, Health Services and Mental Health Administration, National Center for Health Statistics, Health Resources Statistics - Health Manpower and Health Facilities, 1972-73, DHEW Publication No. (HSM) 73-1509, June, 1973.

As indicated in the above table, the average daily patients treated in general hospitals in Northwest Tennessee in 1975 is 31 per cent lower than that of the State of Tennessee and 24 per cent lower than the Nation for 1971. This difference can indicate (1) an unavailability of beds, (2) a healthy population (3) people leaving the area for care or, (4) various other factors.

TABLE 16
Number of Beds Per 1,000 Population 65 and Over
Maintained in Nursing Care and Related Homes By
Census Region and Division
1971

Region and Division	Total Beds	Nursing Care	Personal Care Homes With Nursing	Personal Care Homes Without Nursing	Domiciliary Care
United States	61.6	47.1	9.8	4.5	0.2
Regions:					
Northeast	52.4	39.4	8.5	4.4	0.1
North Central	70.9	53.3	13.7	3.9	0.1
South	52.0	42.1	7.0	2.7	0.2
West	78.7	58.4	10.5	9.4	0.4
South:					
South Atlantic	43.4	32.8	7.1	3.2	0.4
East South Central	43.1	31.5	8.4	3.3	0.0
West South Central	71.8	64.4	6.0	1.5	0.1
Tennessee	38.6	29.9	4.2	4.4	0.0
Northwest Tennessee (1975)	46.4	44.9	0.0	0.0	1.5

Source: U.S. Department of Health, Education, and Welfare, Public Health Service, Health Services and Mental Health Administration, National Center for Health Statistics, Health Resources Statistics - Health Manpower and Health Facilities 1972-73, DHEW Publication No. (HSM) 73-1509, June, 1973.

Table 16 indicates a total of 61.6 beds per 1,000 population 65 and over maintained in nursing homes in the United States in 1971. In comparison, the South in 1971 has 52 beds per 1,000 population 65 and over; whereas for 1975 the Northwest Tennessee area has only 46.4 beds per 1,000 population 65 and over. The Northwest Tennessee area is lower in beds per 1,000 population for 1975 in relationship to the 1971 figures for the United States and the South. Once current statistics for the United States are released, an even greater difference might be seen.

EXISTING RESOURCES

This section on existing resources attempts to demonstrate specific factors concerning the hospitals and nursing homes along with the services each facility provides in the Northwest Tennessee Comprehensive Health Planning Region. There is one licensed home for aged; therefore, it is being mentioned.

The first subdivision of this section deals with hospitals. Initially, they are listed by county with accompanying data for comparison (i.e. the number of beds, the average daily census, the average length of stay). In reviewing the data a difference in the size of the hospitals is ascertained with a low of 40 beds to a high of 173 beds. Next, the services provided within each facility is enumerated. Followup charts are given to indicate the costs (refer to page 21) and the amount of usage of the hospitals (refer to pages 22-26).

The second subdivision addresses nursing homes. These facilities are listed by county and have basic information concerning the number of beds and the length of stay. The nursing homes vary greatly in the average length of stay by patients utilizing the facility. Of those presently operating, the shortest length of stay is 88.2 days and the longest length of stay is 1504.9 days. Within this subdivision a breakdown of the type of patients is given (i.e. Medicare/Medicaid, age, sex, race, and marital status - refer to pages 28 and 29). Finally, a chart details the type of services available in the nursing homes.

The one home for the aged was included in the nursing home charts for reasons of brevity and were not included in the calculations for nursing homes.

LICENSED NORTHWEST TENNESSEE HOSPITALS
BY COUNTY
September, 1975

	Number Of Beds	Average Daily Census	Average Length of Stay
BENTON			
Benton County General Hospital	54	55.41	5.2
CARROLL			
Carroll County General Hospital	72	42.15	5.8
McKenzie Memorial Hospital	40	16.82	6.0
DYER			
Parkview Hospital	160	128.63	5.4
GIBSON			
Gibson General Hospital	65	49.01	7.8
City of Milan Hospital	52	37.00	7.9
Humboldt Cedar Crest Hospital	62	45.94	7.3
Trenton Memorial Hospital	46	36.93	5.2
HENRY			
Henry County General Hospital	166	97.14	7.5
OBION			
Obion County General Hospital	173	134.94	7.3
WEAKLEY			
Volunteer General Hospital	75	47.50	6.4

Source: State of Tennessee, Department of Public Health, Division of Health Care Facilities---Quality Assurance Section, Directory - Licensed Hospitals in Tennessee, September 1, 1975.

State of Tennessee, Department of Public Health, Division of Health Care Facilities---Quality Assurance Section, Joint Annual Report of Hospitals - 1974, February, 1975.

FACILITY SERVICES
Total Possible Services Any Hospital Can Provide

	Category	Number Services Within Category
I	Medical Surgical	25
II	Mental	3
III	Therapy	3
IV	Radiation	6
V	Special	10
VI	Supportive	7
	GRAND TOTAL	54

	I	II	III	IV	V	VI	TOTAL
Benton County General Hospital	10	0	1	1	2	4	18
Carroll County General Hospital	10	0	1	1	3	4	19
McKenzie Memorial Hospital	7	0	1	1	0	5	14
Parkview Hospital	11	0	2	5	3	7	28
Gibson General Hospital	10	0	2	0	4	5	21
Humboldt Cedar Crest Hospital	9	0	2	1	4	6	22
Trenton Memorial Hospital	8	0	2	1	1	5	17
City of Milan Hospital	8	0	1	1	3	5	18
Henry County General Hospital	10	0	2	2	2	7	23
Obion County General Hospital	12	0	2	5	2	6	27
Volunteer General Hospital	12	0	2	1	2	6	23

Source: unpublished information from the Northwest Tennessee Health Planning Council, Health Facilities Survey, November, 1975.

The above chart needs to be studied along with the table on the next page. Both are an important determining factor (the total services provided by a facility) for a review formula, the Bed-Population Ratio Method. Facility Services indicates the different categories of services with the maximum a facility can have along with the number of services provided within each category. Finally, the table on the following page gives a more detailed listing.

NORTHWEST TENNESSEE HOSPITALS
BY SERVICES PROVIDED
November, 1975

	Autopsies	Auto Analysis	Blood Bank	Cardiovascular	Electrocardiograph	Family Planning	Obstetric Delivery Room	Outpatient Department	Pathology Lab	Pharmacy	Post Operative Room	Pulmonary Function	Renal Dialysis	Psychiatric In-Unit	Physical Therapy	Diagnostic Radiation	Theraputic Radiation	Cobalt Therapy	Radioactive Isotope	Radiation Therapy	Coronary Care	Intensive Care	Premature Nursery	Critical Care Nursery	Suspect Nursery	Electronic Data Processing	Hospital Auxillary	Medical Library	Social Service Department	Food Service
Benton County General Hospital	X		X		X		X		X	X	X	X				X							X	X				X		X
Carroll County General Hospital	X		X		X		X		X	X	X		X			X					X	X	X					X		X
McKenzie Memorial Hospital	X	X	X							X	X					X										X		X		X
Parkview Hospital	X	X	X		X		X		X	X	X			X	X	X	X	X	X	X	X		X		X	X	X	X	X	X
Gibson General Hospital	X		X		X		X		X	X	X	X				X					X		X		X	X	X	X		X
Humboldt Cedar Crest Hospital	X				X		X		X	X	X	X				X					X	X	X	X		X	X	X		X
Trenton Memorial Hospital			X		X		X		X	X	X				X	X								X			X	X	X
City of Milan Hospital						X	X	X	X	X	X					X					X	X		X	X		X			X
Henry County General Hospital	X	X	X		X		X		X		X			X	X	X			X					X	X	X	X	X	X	X
Obion County General Hospital	X	X	X		X		X		X	X	X	X			X	X	X	X	X	X		X		X		X	X	X	X	X
Volunteer General Hospital	X	X	X	X	X		X		X	X	X	X			X				X		X			X	X	X	X			X

Note: All hospitals report to have a clinical laboratory, an operating suite, an inhalation therapy section, a laundry service and a housekeeping service.

Source: unpublished information from the Northwest Tennessee Comprehensive Health Planning Council, Health Facilities Survey, November, 1975.

Northwest Tennessee Hospital Finances
By Hospital
1974

	CAPITAL ASSESTS				
	TOTAL OPERATING COSTS	TOTAL INVESTMENTS	TOTAL ANNUAL DEPRECIATION	Cost Per Patient Day INCLUDING DEPRECIATION	Cost Per Patient Day EXCLUDING DEPRECIATION
	(Rounded in 1,000's)				
Benton County General Hospital	$2306	$ 981	$ 55	$ 93.59	$ 90.56
Carroll County General Hospital	2074	646	67	105.97	101.42
McKenzie Memorial Hospital	117	1342	Unknown	Unknown	75.08
Parkview Hospital	3968	3764	143	87.12	84.10
Gibson General Hospital	1876	69	66	105.13	101.41
Humboldt Cedar Crest Hospital	1520	1684	77	92.44	87.75
Trenton Memorial Hospital	1268	1311	62	106.78	101.80
*City of Milan Hospital	1414	216	19	109.22	107.72
Henry County General Hospital	3069	2963	134	89.67	85.91
Obion County General Hospital	4459	4958	170	77.77	73.84
Volunteer General Hospital	1659	84	55	97.92	94.77
Region Total	$23,917	$18,018	$848	$976.95	$1023.15
Average	2,174	1,638	85	97.69	93.01

* Due to unavailability of information the 1974 Joint Annual Report was used to fill in some columns.

Source: unpublished information from the Northwest Tennessee Comprehensive Health Planning Council, Health Facilities Survey, November, 1975.

Northwest Tennessee Occupancy by Hospitals
1975

	Type of Organization	Number of Licensed Beds	Admissions	Discharges*	Percent Occupancy
Benton County General Hospital	County	54	3374	3289	102.60%
Carroll County General Hospital	County	72	2737	2641	58.54%
McKenzie Memorial Hospital	Corporation	40	257	245	42.05%
Parkview Hospital	County	160	7373	7168	80.39%
Gibson General Hospital	Corporation	65	2456	2372	75.4 %
Humboldt Cedar Crest Hospital	Corporation	62	2092	2013	74.10%
***Trenton Memorial Hospital	Corporation	46	866	848	80.28%
**City of Milan Hospital	City	52	2522	2453	71.15%
Henry County General Hospital	County	166	4808	4612	58.52%
Obion County General Hospital	County	173	6677	6623	78.00%
Volunteer General Hospital	City	75	3027	2909	63.33%
Region Total		965	35,919	34,698	
Average		88	3,265	3,154	74.26%

* Excluding Deaths
** Due to unavailability of information the 1974 Joint Annual Report was used to fill in some columns
*** Reported on the initial six months of operation

Source: unpublished information from the Northwest Tennessee Comprehensive Health Planning Council, Health Facilities Survey, November, 1975.

Northwest Tennessee Hospital Admissions
November, 1975

	QUESTION NUMBER					
	1	2	3	4	5	6
Benton County General Hospital	25-30 People	0	No Limit	No Limit	Two Days	Never
Carroll County General Hospital	0	0	No Limit	No Limit	No Wait	Never
McKenzie Memorial Hospital	0	0	No Limit	50%	No Wait	Never
Parkview Hospital	6-8 People	0	13	No Limit	No Wait	Never
Gibson General Hospital	0	0	No Limit	No Limit	No Wait	Never
Humboldt Cedar Crest Hospital	0	0	No Limit	6	No Wait	Never
Trenton Memorial Hospital	0	0	3	No Limit	One Day	Never
City of Milan Hospital	0	0	No Limit	2	No Wait	Never
Henry County General Hospital	0	0	1-12	No Limit	No Wait	Never
Obion County General Hospital	0	0	15	No Limit	No Wait	Never
Volunteer General Hospital	0	0	3-5	No Limit	No Wait	Never

Questions

1. How long is the average waiting list? Number of People
2. How many days or weeks must a person wait to be admitted excluding the Emergency Room cases? Number of Days or Weeks
3. How many surgical cases allowed to be admitted each day excluding the Emergency Room cases? A Number
4. How many beds are left open to accomdate your emergencies? Number of Beds
5. How long must a patient wait to be admitted in order to have elective surgery? Number of Days or Weeks
6. How often are patients turned away because of nonavailability of beds? Number of Patients Each Day

Source: unpublished information from Northwest Tennessee Comprehensive Health Planning Council, Telephone Survey of Hospitals' Admissions Offices and Emergency Rooms, November, 1975.

Northwest Tennessee Emergency Room Utilization
November, 1975

	QUESTION NUMBER				
	1	2	3	4	5
Benton County General Hospital	80%	5%	No	Yes	3-5 Minutes
Carroll County General Hospital	50%	25-30%	No	Yes	10 Minutes
McKenzie Memorial Hospital	90%	10%	No	Yes	5 Minutes
Parkview Hospital	70%	10%	No	Yes	5 Minutes
Gibson General Hospital	Unknown	Unknown	Unknown	Unknown	Unknown
Humboldt Cedar Crest Hospital	80%	12%	No	Yes	10 Minutes
Trenton Memorial Hospital	65%	40%	No	Yes	5 Minutes
City of Milan Hospital	Unknown	Unknown	No	Yes	15-20 Minutes
Henry County General Hospital	80%	100%	No	Yes	10 Minutes
Obion County General Hospital	60%	30%	No	Yes	15 Minutes
Volunteer General Hospital	50%	10%	No	Yes	5-10 Minutes

QUESTIONS

1. What percent of cases arriving at the Emergency Room are nonemergencies? Percent
2. What percent of Emergency Room cases are admitted to the hospital? Percent
3. Do you have a full-time Emergency Room doctor to cover each shift? Yes or No
4. Do you notify the staff physician on duty but out of the hospital? Yes or No
5. If yes, on the average how long does it take to get the doctor to the hospital to see the emergency patient? Number of Minutes or Hours

Source: unpublished information from Northwest Tennessee Comprehensive Health Planning Council, Telephone Survey of Hospitals' Admissions Offices and Emergency Rooms, November, 1975.

The purpose for the hospital admission data was to locate any significant problems specific to individual hospitals. From the answers received concerning admissions, no patient has to wait more than two days to have any elective surgery performed; but limits as to the number of surgical cases admitted for one day are set in two of the hospitals: Obion County General and Parkview Hospital. This indicates a high utilization rate which, has the potential to create handicaps for growth. On the other hand, when there is never a time when a hospital turns away nonemergency cases two events could be occuring. First, the occupancy rate is low enough to have economic problems which can cause high prices to those who are unfortunate enough to become ill. Second, the patients may be placed in hallways or overcrowding of individual rooms. This can have a serious psychological effect on the patient along with deteriorating the health care provided.

The emergency room portion of the survey supports a commonly known fact that most cases treated in emergency rooms are nonemergencies. It also demonstrates that all emergencies are not admitted to the hospital; therefore, the question of bed need arises. Finally, it is admirable to note the amount of time it takes a physician to reach the emergency patient (a maximum of twenty minutes). In some environments, the patient must wait hours in the emergency room before any treatment is begun.

If progress toward a chosen goal is possible, it is necessary to know with a reasonable degree of accuracy:

a. what the conditions in the community are,

b. what resources will be available,

c. what may be encountered as to community attitudes.

This patient utilization section clearly demonstrates that the specific conditions are not actually known. Resources including personnel, equipment, facilities training capabilities and problem areas must be known to planning groups before realistic objectives can be developed for the entire region. The determination of resources and problem areas must be a continuous consideration in planning since existing and potential resources and problems of any community constantly change. For this reason, the Council wants to encourage more accurate reporting of the existing conditions.

LICENSED NORTHWEST TENNESSEE HOMES FOR AGED BY COUNTY
September, 1975

	Number Of Beds	Average Daily Census	Average Length of Stay
GIBSON			
Harlan-Morris Home	48	47.95	1345.8

Source: Tennessee Department of Public Health, Directory - Licensed Homes for Aged in Tennessee, September 1, 1975.

LICENSED NORTHWEST TENNESSEE NURSING HOMES
BY COUNTY
September, 1975

	Number Of Beds	Average Daily Census	Average Length of Stay
BENTON			
*Benton County General Hospital Nursing Home	39	23.59	25.2
**Care Inn of Camden	119		
CARROLL			
Carroll County Nursing Home	42	41.16	883.5
Oak Manor Nursing Home	49	44.14	1464.5
CROCKETT			
Crockett County Nursing Home	48	47.71	692.0
DYER			
Nucare Convalescent Center	50	50.00	553.0
Parkview Convalescent Center	71	70.05	756.9
GIBSON			
Convalescent Center	44	30.93	88.2
Douglas Nursing Home, Inc.	72	32.00	834.3
Nucare Convalescent Center	120	85.05	393.0
Ridgewood Retirement Inn	75	73.57	260.6
Sante Care Center	66	32.86	600.3
HENRY			
Crestview Rest Home	49	48.51	295.0
Henry County Nursing Home	114	122.32	1352.9
Puryear Nursing Home	25	22.00	401.5
LAKE			
**Reelfoot Manor Nursing Home	119		
OBION			
Obion County Hospital Long-Term Unit	86	85.14	359.5
Obion County Rest Home	49	48.02	438.0
WEAKLEY			
Hillview Nursing Home, Inc.	70	69.44	905.0
Weakley County Nursing Home	139	111.32	1504.9

* Closed Spring of 1975
** New Facility ADC and ALS unavailable at this time.

Source: State of Tennessee, Department of Public Health, Division of Health Care Facilities---Quality Assurance Section, Directory - Licensed Nursing Homes in Tennessee, September 1, 1975.

Northwest Tennessee Nursing Homes 1974

	Administrator Licensed	Type of Organization	Number of Licensed Beds	Number of Medicare Patients	Number of Medicaid Patients	Intermediate Care Semi-Private Cost Per Day
Care Inn - Camden	Yes	Corporation	119	0	---	--------
Carroll County Nursing Home*	Yes	County	42	0	42	$11.85
Oak Manor Nursing Home	Yes	Corporation	49	0	49	19.00
Crockett County Nursing Home	Yes	Proprietary	48	0	48	10.90
Dyersburg Nucare Convalescent*	Yes	Corporation	50	0	50	14.00
Parkview Convalescent Unit	Yes	County	71	0	56	16.00
Trenton Convalescent Center	Yes	Corporation	44	0	44	18.00
Douglas Nursing Home	Yes	Corporation	72	0	30	16.90
**Harlan Morris Home*	No	Nonprofit	48	16	0	5.30
Humboldt Nucare Convalescent	Yes	Corporation	120	0	55	19.00
Ridgewood Retirement Inn	Yes	Corporation	75	4	75	16.50
Sante Care Center	Yes	Partnership	66	0	66	17.85
Crestview Rest Home	Yes	Corporation	49	0	49	19.00
Henry County Nursing & Rest Home	Yes	County	114	0	114	15.50
Puryear Nursing Home	Yes	Proprietary	25	0*	0*	13.33*
***Reelfoot Manor		Proprietary	119			
Obion County Hospital Long Term Unit	No	County	86	0	48	21.00
Obion County Rest Home	No	County	49	0	49	9.75
Hillview Nursing Home, Inc.	Yes	Corporation	70	0	70	14.35
Weakley County Nursing Home	Yes	County	139	0	95*	13.00
Region Total			1455		955	
Average Per Nursing Home			73		60	$ 15.07

* Joint Annual Report of Nursing Homes - 1974
** The only Licensed Home for the Aged
*** Tabulation unavailable at present time
--- Information not released by the Facility

Source: unpublished information from the Northwest Tennessee Comprehensive Health Planning Council, Health Facilities Survey, November, 1975.

NORTHWEST TENNESSEE PATIENT DATA
BY NURSING HOME
1974

	Average Age Resident	Number Males	Number Females	Number Whites	Number Nonwhites	Number Single or Divorced	Number Married	Number Widows or Widowers	Average Stay In Months	Percent * Occupancy
***Care Inn - Camden										
Carroll County Nursing Home*	75+	7	35	---	--	--	--	---	30	98%
Oak Manor Nursing Home	83	11	37	48	0	11	0	37	33	90%
Crockett County Nursing Home	81	8	40	48	0	8	1	39	49	99%
Dyersburg Nucare Convalescent Center	75+	8	42	---	--	--	--	---	18	100%
Parkview Convalescent Unit	78	17	54	67	3	13	11	47	17	99.3%
Trenton Memorial Convalescent Center	83	6	22	28	0	2	1	25	5	88%
Douglas Nursing Home	75+*	4	28	---	--	--	--	---	28	100%
**Harlan Morris Home*	75+	12	36	---	--	--	--	---	45	100%
Humboldt Nucare Convalescent Center	76	57	108	139	26	30	34	101	8	95%
Ridgewood Retirement Inn*	75+	9	63	---	--	--	--	---	9	98%
Santé Care Center*	75+	19	41	---	--	--	--	---	20	50%
Crestview Rest Home*	70	18	30	---	--	--	--	---	10	99%
Henry County Nursing & Rest Home	81	29	84	103	10	26	7	72	36	107%
Puryear Nursing Home*	75+	8	13	---	--	--	--	---	13	88%
***Reelfoot Manor*										
Obion County Hospital Long Term Unit	75+	18	63	---	--	--	--	---	15*	102%
Obion County Rest Home	77	21	28	47	2	9	4	36	21	98%
Hillview Nursing Home, Inc.	82	13	57	69	0	5	6	58	38	99%
Weakley County Nursing Home*	75+	40	72	---	--	--	--	---	50	99%
Region Total		305	853						445	
**** Average Per Nursing Home	77	17	47	93%	7%	18%	11%	71%	25	95%

* Joint Annual Report of Nursing Homes - 1974
** The only Licensed Home Home for the Aged
*** Tabulation unavailable at present time
**** Average obtained using only available data in each column
--- Information not released by Facility

Source: unpublished information from the Northwest Tennessee Comprehensive Health Planning Council; Health Facilities Survey, November, 1975.

Northwest Tennessee Nursing Homes By Services Available and Status Of Patient 1974

	Number Ambulatory Patients	Number Semi-Ambulatory Patients	Number Bed Patients	Physical Therapy	Occupational Therapy	Recreational Therapy	Drug Room	Activity Program	Other Services
Care Inn - Camden	53	46	16	No	Yes	Yes	Yes	Yes	No
Carroll County Nursing Home	28	7	7	No	No	Yes	Nc	Yes	Yes
Oak Manor Nursing Home	26*	16*	7*	No	No	Yes	Yes	Yes	No
Dyersburg Nucare Convalescent Center	22	20	6	No	No	Yes	Yes	Yes	No
Parkview Convalescent Unit	28	19	24	Yes	Yes	Yes	Yes	Yes	No
Trenton Convalescent Center	17	13	11	Yes	No	Yes	Yes	Yes	No
Douglas Nursing Home	9*	6*	17*	No	No	Yes	No	Yes	No
**Harlan Morris Home	45	1	2	No	No	No	No	No	No
Humboldt Nucare Convalescent Center	20	20	8	No	No	Yes	No	Yes	Yes
Ridgewood Retirement Inn	35	26	11	Yes	Yes	No	Yes	Yes	Yes
Sante Care Center	51	12	2	No	No	Yes	Yes	Yes	Yes
Crestview Rest Home	28	10	10	NO	NO	NO	NO	Yes	Yes
Henry County Nursing & Rest Home	12	49	53	Yes	Yes	Yes	Yes	Yes	No
Puryear Nursing Home	10	1	10	No	No	Yes	Yes	Yes	Yes
***Reelfoot Manor									
Obion County Hospital Long Term Unit	22	28	35	Yes	Yes	Yes	Yes	Yes	Yes
Obion County Rest Home	21	16	12	Yes	No	Yes	Yes	Yes	No
Hillview Nursing Home, Inc.	40	20	10	No	No	No	No	Yes	No
Weakley County Nursing Home	89	25	25	No	No	Yes	Yes	Yes	No
Region Total	568	344	295						
Average Per Nursing Home	30	18	16						

* Joint Annual Report of Nursing Homes - 1974
** The only Licensed Home for the Aged
*** Tabulation unavailable at present time

Source: unpublished information from the Northwest Tennessee Comprehensive Health Planning Council, Health Facilities Survey, November, 1975.

PART TWO

BED NEED FORMULAS

Hospital and nursing home construction is becoming increasingly important for several reasons: (1) medical knowledge is advancing; (2) more facilities are needed as population grows: (3) people expect more from the medical community; and (4) people can pay for expanded services as incomes rise. Even those who cannot afford better health care have greater access to hospitals and nursing homes as a result of Medicare and Medicaid.

Hospitals and nursing home construction -- public and private, profit and nonprofit -- have seen a growing increase in the per capita amount of construction expenditure, increasing from $6.04 per capita in 1960 to $20.36 per capita in 1974. The value of this form of construction rose from $1 billion in 1959 to $3 billion in 1969 and to $4 billion in 1974.

Despite substantial expenditures already made on hospital construction, expenditures for public and private hospitals are expected to rise to $6 billion by 1978 according to the Public Health Service. Much of this increase is expected to go for additions to existing hospitals.[3] Even though expenditures are expected to increase, the supply of dollars available for health care is finite and approaching its limit.

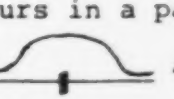
Public resistance to premium increases for Blue Cross, Blue Shield, and other not-for-profit plans throughout the country; the recent increase in deductibles under Medicare and the contemplation of further restrictions in the near future on both Medicare and Medicaid coverage are unmistakable signs that Americans are bringing to a halt the virtually unbroken pattern of increasing commitment to expenditures for health care services that has prevailed over the past 30 years.[3]

Researchers and cost studies show that an empty bed costs a hospital from $^{2}/_{3}$ to $^{3}/_{4}$ as much as an occupied one, but it brings in no revenue. The fixed costs of operating nursing homes and hospital beds continue when facilities are only partially filled; hospitals can save very little when beds are empty. Reimbursement to any hospital is based upon total costs for operating the facility, and ideally, health facilities strive to obtain a high rate of occupancy in order to alleviate the burden of empty beds.

There is another side to the issue of occupancy rate. When a high occupancy rate occurs steadily, it does not necessarily follow that more beds need to be built. The law of supply and demand has not been operating with regard to health services. In the field of health care, unlike in most other fields, an oversupply of key commodities does not produce a fall in prices and then a correction of the oversupply. An oversupply of health care resources tend to generate increased demand for services, even though that demand exceeds any objectively demonstrable need.

In trying to usefully identify a starting point in this vast array of issues, the Northwest Tennessee Comprehensive Health Planning Council recognizes that facilities are instrumental means and not ends in themselves. From the point of view of investment planning, physical facilities clearly represent a capital item. Taking into account that the physical facility by itself is not a producing unit, the Council proposes to use formulas as a parametric indicator to begin evaluating one facet of this region's health care delivery system.

ACUTE CARE FORMULAS

The Northwest Tennessee Comprehensive Health Planning Council selected two formulas for the acute care bed need. The first is the Normile Method which appeared in 1969 and sometimes referred to as the Standard Deviation Method. F. R. Normile, who authored the method, strongly criticized the Hill-Burton Method for overestimating the number of beds needed. This method is grounded in statistical theory and makes two assumptions. First, the events causing hospitalization are random in nature (every member of the population has an equal chance of becoming ill) and therefore tend to follow a normal distribution (a grouping of the possible events to indicate the frequency with which one event occurs in a particular interval graphically demonstrated  as a bell shape curve). Second, the exact time a person is admitted to a hospital is random and

no one can predict exactly when a specific person will need medical care. According to statistical theory, the average daily census can be estimated from the number of admissions in a given year. Further statistical theory defines the standard deviation (the way events are distributed in a normal distribution within a certain interval) from this average as the positive square root of the average daily census and states that 99 per cent of variation around this average daily census will be within some particular interval. For this formula, 2.33 standard deviations is that interval. *"In other words, on 99 days out of 100, the daily census should not exceed or fall below the average daily census by more that 2.33 standard deviations. This method projects a bed need which will result in overcrowding one day out of 100. As would be expected, it always gives a lower estimate of bed need.*[5]"

Thus,

$$\text{Beds needed} = \text{ADC} + 2.33\sqrt{\text{ADC}}$$

ADC means average daily census

Using Benton County General Hospital as an example:

Its 1975 average daily census is 63.23

$$\text{Beds needed} = 63.23 + 2.33\sqrt{63.23}$$

$$\text{Beds needed} = 63.23 + 2.33 \quad (7.95)$$

$$\text{Beds needed} = 82$$

NORMILE FORMULA APPLICATIONS
1975 - 1990

% Increases 1980	% Increases 1990		Beds 1975	ADC 1975	Bed Need 1975	ADC 1980	Bed Need 1980	ADC 1990	Bed Need 1990
.037	.066	Benton County General Hospital	54	63.23	82	65.57	84	69.90	89
.047	.065	Carroll County General Hospital	72	44.92	61	47.03	63	50.09	67
.047	.065	McKenzie Memorial Hospital	40	21.72	33	22.74	34	24.22	36
.045	.050	Parkview Hospital	160	133.88	161	139.91	168	146.91	175
.022	.080	Gibson General Hospital	65	52.13	69	53.28	70	57.54	75
.022	.080	Humboldt Cedar Crest Hospital	62	48.52	65	49.59	66	53.56	71
.022	.080	Trenton Memorial Hospital	46	41.10	56	42.00	57	45.36	61
.022	.080	City of Milan Hospital	52	37.00	51	37.81	52	40.84	56
.033	.038	Henry County General Hospital	166	101.43	125	104.78	129	108.76	133
.051	.032	Obion County General Hospital	173	134.03	161	140.87	169	145.38	174
.090	.062	Volunteer General Hospital	75	53.97	71	58.83	77	62.48	81
			965		935		969		1018

N = ADC + 2.33 ADC
Bed Need will increase as population projections increases.
A hospital per cent share of region's total patient load is assumed to remain the same thru 1990.

Source: Northwest Tennessee Comprehensive Health Planning Council, November, 1975.

Average Daily Census for the Northwest Tennessee Hospitals September 1, 1974 Through August 31, 1975

Benton County General	Carroll County General	McKenzie Memorial	Parkview Hospital	Gibson General Hospital	Humboldt Cedar Crest
85.06 August	49.8 July	27.1 February	140.2 January	56 January	50.6 October
73.84 July	45.0 September	25.1 January	139.9 July	54 July	50.4 February
56.81 March	44.1 March	20.2 March	132.5 October	52 February	48.9 August
55.21 February	43.7 January	20.1 May	131.3 June	51 September	47.7 July
54.87 May	43.7 May	20.1 April	130.3 February	50 August	47.3 September
53.61 January	43.2 February	17.9 November	129.1 November	49.8 October	46.2 November
52.23 June	42.5 April	17.0 December	128.9 March	49.8 June	46.0 March
49.93 September	41.7 June	16.2 October	128.9 April	49 March	45.7 January
48.73 April	39.2 October	14.9 June	127.2 May	47 April	44.0 May
48.13 November	38.6 August	13.7 August	124.8 December	46.5 May	43.5 April
44.25 October	38.2 December	9.5 July	120 September	45.0 November	43.2 December
42.28 December	36.1 November		110.5 August	38 December	37.8 June

Trenton Memorial	Milan Hospital	Henry County Hospital	Obion County Hospital	Volunteer General
45.1 February	37 September	104.9 March	144 January	58.8 February
43.7 January	37 October	104.5 October	136.8 February	57.7 September
40.7 March	37 November	103.9 February	135 March	55.2 March
40.0 May	37 December	100.7 January	132 October	54.1 January
38.7 September	37 January	98.0 August	128.4 March	49.7 October
38.4 November	37 February	96.6 June	128 August	48.3 April
37.3 June	37 March	96.3 May	127 June	46.7 July
36.0 April	37 April	94.16 July	123 November	45.1 August
34.0 December	37 May	93.4 November	122 July	40.2 November
31.5 October	37 June	91.4 September	121.8 September	39.8 December
31.0 September	37 July	91 December	121 May	37.4 May
26.7 July	37 August	90.8 April	114 December	37.0 June

Source: unpublished information from the Northwest Tennessee Comprehensive Health Planning Council, Health Facilities Telephone Survey, November, 1975.

The second acute care formula is the *"Bed - Population Ratio Method which was developed by the U. S. Public Health Service in 1945. Based on a nationwide survey of hospitals, the Service produced a simple, straight-forward method for estimating the number of beds needed in a given area. Two areas were defined: the primary area, or medical center for the larger area, and the secondary area. The population of the county which contained the medical center was considered the primary area population. Since there is generally no question as to where the medical center is located, there is little problem in dividing the population (NOTE: It is possible that no medical center may exist in a given area; in this case the entire population is considered secondary.)*

The population is divided; the primary area is allocated 4.5 beds per 1,000 of its immediate population plus .5 beds per 1,000 population of the secondary area. The secondary area is allocated 4.0 beds per 1,000 population for its hospital." [6]

The Council elected to use the Bed - Population Ratio Method as one parameter but with a few variations. The population in this region cannot be divided into primary and secondary area, since there exist no major medical centers; but plans are being initiated to develop centers. With this in mind, the service area for each hospital were assigned. This designation was accomplished with the use of a telephone survey, a patient origin survey, the Joint Annual Reports

of 1974, the average daily census and conversations with administrators of the larger hospitals. Once the population of the service areas was assigned and tabulated, the information was used as the population base figure for each hospital. Next, the services provided by each hospital were tabulated, and rated against the total possible services the most sophisticated hospital could ever have within today's constraints of medical technology. With this data the number of beds per one thousand population per number of services offered was analyzed. In other words, there was an increase (or decrease) of each hospital's service population and a rewarding factor (See Page 19) for offering more services added to the original Bed - Population formula. An example of this formula is:

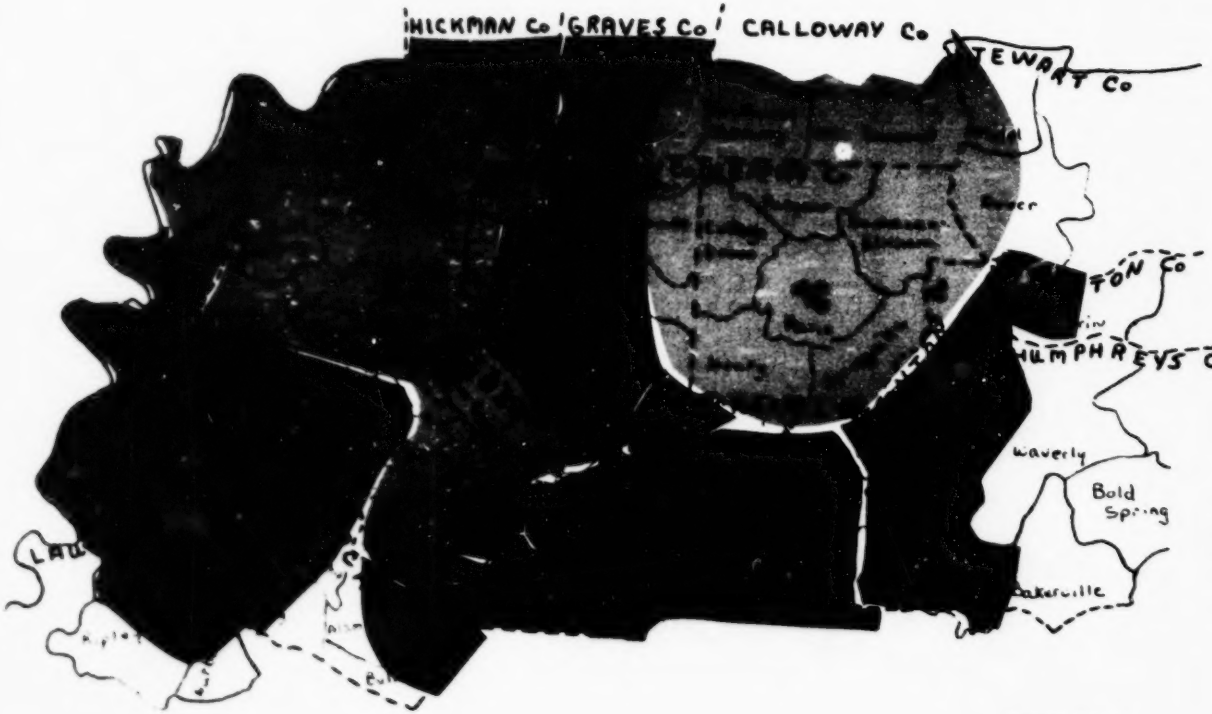
Benton County General Hospital was given as its service area population a total of 13,483 (the breakdown of subdivisions can be found on page 40). The number of services provided by this hospital was 18 (found on page 43), therefore, receiving the rating of 3.5 beds per 1,000 population (found on page 43). Hence for 1970:

$$\text{Beds needed} = \frac{13,483}{1,000} \times 3.5$$

$$\text{Beds needed} = 47$$

The map on the following page gives a graphic illustration of the location of the hospitals along with a delineation of the service areas. County borders were not used because patient origin studies indicated that some hospitals serviced a wider geographic area than others.

SERVICE AREAS FOR NORTHWEST TENNESSEE HOSPITALS
November, 1975



Reproduced from best available copy.

SYMBOLS

--- County Border
—— Census County Subdivisions
Location of One Hospital
Location of Two Hospitals

Source: Northwest Tennessee Comprehensive Health Planning Council, Health Facilities Survey, November, 1975.

U.S. Bureau of the Census, General Population Characteristics - 1970, Table 10, Tennessee 44-17, 1970.

NORTHWEST TENNESSEE SERVICE AREAS
BY HOSPITAL
1970

Benton County General Hospital

Subdivisions:		Census:
80%	Big Sandy	1,642
90%	Camden, North	5,738
	Camden, South	2,519
	Hollady	1,180
11%	Bruceton	456
50%	West Erin	1,948
	TOTAL	13,483

Carroll County General Hospital

Subdivisions:		Census:
79%	Bruceton	3,274
3%	McKenzie	188
95%	North Huntingdon	4,753
	Trezevant	4,771
	Cedar Grove	2,294
	Clarksburg	1,960
	South Huntingdon	1,299
	TOTAL	18,539

McKenzie Memorial Hospital

Subdivisions:		Census:
10%	Gleason	391
94%	McKenzie	5,894
	TOTAL	6,285

Parkview Hospital

Subdivisions:		Census:
30%	Ripley	2,749
95%	Mississippi-Obion	1,638
80%	Newbern	3,701
	Finley	3,838
	Millsfield	1,312
70%	Yorkville	1,154
20%	Brazil-Gibson	371
	Friendship	1,856
50%	Maury City	1,581
	Halls	3,700
	Gates	2,165
	Ridgely	3,409
	Ro Ellen	1,577
	Fowlkes	2,827
	Dyersburg	14,523
30%	Ashport	287
30%	Nutbush	496
	TOTAL	47,814

Trenton Memorial Hospital
Gibson General Hospital

Subdivisions:		Census:
70%	China Grove	728
	Bradford	2,719
	Trenton, North	2,112
	Trenton, South	6,430
80%	Brazil-Gibson	1,546
50%	Rutherford	1,433
	Dyer	3,632
	TOTAL	18,600

Humboldt Cedar Crest Hospital

Subdivisions:		Census:
	Gibson	1,360
	Humboldt	11,531
	Gadsden	1,994
33%	Alamo	1,398
33%	Bells	1,041
	TOTAL	17,324

City of Milan Hospital

Subdivisions:		Census:
	Medina	1,763
	Milan	10,838
	TOTAL	12,601

Henry County General Hospital

Subdivisions:		Census:
	New Concord	2,731
	Southwest Calloway	3,943
50%	Dover	1,112
	Model	14
3%	McKenzie	189
	Buchanan-Elkhorn	1,748
	Cottage Grove	1,599
	Henry	1,625
	Paris	15,078
	Puryear	2,234
	Springville	1,465
5%	Huntingdon, North	250
10%	Bruceton	414
10%	Camden, North	638
20%	Big Sandy	410
5%	Sadalia	138

Henry County General Hospital, Continued

Subdivisions:	Census:
10% Chestnut Glade-Dukedom	130
50% Palmersville	672
2% Dresden	93
40% Gleason	1,564
TOTAL	36,047

Obion County General Hospital

Subdivisions:	Census:
Dixie	1,643
Elbridge-Cloverdale	992
Hornbeak-Samburg	2,539
Kenton-Mason Hall	1,781
Lindenwood	1,201
Obion-Troy	3,652
Union City	11,925
Rives	2,142
South Fulton	4,061
60% Martin	6,748
20% Sharon	486
5% Greenfield	197
30% China Grove	312
50% Rutherford	1,433
30% Yorkville	494
20% Newbern	925
5% Mississippi-Obion	86
Tiptonville	4,487
50% Fulton	2,511
50% Hickman	2,132
50% Western	449
40% Clinton, East	1,216
TOTAL	51,412

Volunteer General Hospital

Subdivisions:	Census:
90% Chestnut Glade-Dukedom	1,166
50% Palmersville	672
98% Dresden	4,573
40% Gleason	1,564
2% Sadalia	55
2% Wingo-Water Valley	68
95% Greenfield	3,737
80% Sharon	1,945
40% Martin	4,498
TOTAL	18,278

Source: U.S. Department of Commerce; Bureau of the Census, 1970 General Population Characteristics.

Northwest Tennessee Comprehensive Health Planning Council, A Telephone Survey to Assess Hospital Service Areas - 1975, (June-August 1975).

Tennessee Department of Public Health, Joint Annual Reports - 1974, (February, 1975).

Northwest Tennessee Comprehensive Health Planning Council, The Health Facilities Survey - 1975, (November, 1975).

Application of Bed-Population Ratio Formula

I. Northwest Tennessee Service Area Populations 1970 - 1990

	1970	1974	1980	1990
Benton County General Hospital	13,483	13,960	14,447	15,305
Carroll County General Hospital	18,539	19,195	19,865	21,045
McKenzie Memorial Hospital	6,285	6,508	6,735	7,135
Parkview Hospital	47,184	48,854	50,559	53,562
*Gibson General Hospital				
*Trenton Memorial Hospital	18,600	19,258	19,930	21,114
Humboldt Cedar Crest Hospital	17,324	17,930	18,556	19,658
City of Milan Hospital	12,601	13,047	13,502	14,304
Henry County General Hospital	36,047	37,323	38,626	40,920
Obion County General Hospital	51,412	53,232	55,090	58,362
Volunteer General Hospital	18,278	18,925	19,586	20,749

* These two hospitals are being treated as serving the identical service areas.

Source: U.S. Department of Commerce, Bureau of the Census, 1970 General Population Characteristics.

II. Minimum Services Needed to Function as a Hospital November, 1975

1. Blood Bank
2. Clinical Laboratory
3. Operating Suite
4. Pharmacy
5. Post Operative Recovery Room
6. Medical Records
7. Radiation - Diagnostic
8. Laundry Service
9. Food Service
10. Housekeeping Service

Source: Northwest Tennessee Comprehensive Health Planning Council, November, 1975.

III. Graduated Scale for Variance Factor (X) X Beds Per 1,000 November, 1975

Services		X Beds	Services		X Beds
54-40	=	6.0	24-20	=	4.0
39-35	=	5.5	19-15	=	3.5
34-30	=	5.0	14-10	=	3.0
29-25	=	4.5			

Source: Northwest Tennessee Comprehensive Health Planning Council, November, 1975.

IV. Services Provided Within Each Northwest Tennessee Acute Care Facility* November, 1975

	Number of Services Provided
Benton County General Hospital	18
Carroll County General Hospital	19
McKenzie Memorial Hospital	14
Parkview Hospital	28
Gibson General Hospital	21
Humboldt Cedar Crest Hospital	22
Trenton Memorial Hospital	17
City of Milan Hospital	18
Henry County General Hospital	23
Obion County General Hospital	27
Volunteer General Hospital	23

*According to the 1974 Joint Annual Reports there are 54 possible services a facility can provide.

Source: Tennessee Department of Public Health, Joint Annual Reports - 1974, (February, 1975)

V. Acute Care Bed Need Using Bed - Population Ratio Formula X Bed Per 1,000 November, 1975

	Existing Beds 7-1-75	1970	1974	1980	1990
Benton General Hospital (3.5)	54	47	49	51	54
Carroll County General Hospital (3.5)	72	65	67	70	74
McKenzie Memorial Hospital (3.0)	40	19	20	20	21
Parkview Hospital (4.0)	160	212	220	228	241
*Gibson General Hospital (4.0) } (3.5)	65	65	67	70	74
*Trenton Memorial Hospital (3.5) }	46				
Humboldt Cedar Crest Hospital (4.0)	62	69	72	74	79
City of Milan Hospital (3.5)	52	44	46	47	50
Henry County General Hospital (4.0)	166	144	149	155	164
Obion County General Hospital (4.5)	173	231	240	248	263
Volunteer General Hospital (4.0)	75	73	76	78	83
	965	969	1006	1041	1103

$$\text{Beds needed} = \frac{\text{Population in Service Area}}{1{,}000} \times \text{Variance Factor}$$

*These two hospitals are being treated as serving one service area.

Source: Northwest Tennessee Comprehensive Health Planning Council, November, 1975.

ADVANTAGES & DISADVANTAGES OF THE ACUTE CARE FORMULAS

While using these formulas, one must remember that there is no infalliable way to determine the needs (whether beds or services) in the community. It is also wise to recognize some of the limitations and advantages.

The Normile Method draws on statistical theory in order to choose an occupancy rate rather than picking a number out of the air. A major breakdown is its philosophy on how much capacity a hospital should maintain. Some researchers feel that a hospital, under normal conditions, should never be overcrowded. The Normile Method says that overcrowding on three or four days out of the year is acceptable because it will result in a more economical solution in projecting bed needs. The author of this method feels that the savings to the patient makes an occasional inconvenience acceptable. The Council raises serious doubts as to the ability of this Normile Method to project too far into the future. Room for growth or qualitative improvements could be prohibited. This disadvantage can be resolved with the proper projections made each year as conditions change.

The Bed - Population Ratio Method as orginally presented had three unique features. First, it did not allow local conditions to be taken into account. Second, it was immediately applicable to an area with no hospital now in it.

Third, it was specifically designed to be applicable to regional health planning. The method ha[illegible] some drawbacks. This method is twenty years old and medicine has advanced and changed substantialy in that time; and it made no allowances for changing local conditions. The Council recognizing these facts installed two factors (See I & II, page 42) to adjust the major drawbacks. One notable disadvantage is the apparent lag factor in this and all formulas. A patient to be counted must have already used the health care delivery system.[7]

LONG TERM CARE

The dual system of American medical care, one focused toward the poor, the other toward the nonpoor, works a unique disadvantage to the elderly who themselves represent higher proportions of poor than other segments of the population. Poverty- and age- specific death and disease rates are highly correlated with the nature of illness. Where specific curative measures for acute illness exist, they are usually available even though awkwardly to rich and poor alike. On the other hand, where the disabling effects of disease can be prevented by early detection and prompt therapy or can be limited by long-term supportive care, there is a disastrous difference in the availability of personal health services to the rich and to the poor. These descrepancies are not based on defects of scientific knowledge as much as they are on defects in the production and distribution of health resources.

The support of older people who are economically and personally no longer independent is a health problem of explosive potential. It is so formidable a problem that it is inevitably excluded from private and public discussions of provision of personal health services. The specific disease episodies of the aged do not lend themselves to neat actuarial prediction. There is no conclusive end point to their treatment, and, while most are not completely dependent (economically or physically), neither are they essentially self-sufficient. Perhaps no period of life requires such a spectrum of services and resources as that of the older age group.[8]

The significant health problem of the aged especially those requiring institutional care is their inability to adapt to chronic illness. This fact has been thoroughly documented by many researchers. While a great need of the elderly is for acute medical care, there is overwhelming evidence to indicate that an even greater need exists for solving the problems of chronic illness. Acute medical care is sought when the need arises; but when a chronic illness occurs, the senior citizens have sought help from themselves, their families, and the community without consulting the health care delivery system.

The notation that four of five elderly suffer the onset of some chronic condition does not necessarily indicate the extent of disability or impairment of function. Researchers report that 25 per cent of the elderly have major problems of adaptability because of a chronic condition. Within this group a smaller percentage requires

a high degree of services for support, either of themselves or their families, in dealing with their chronic condition.[9]

One admits that the major preoccupation has been with the acute aspects of health care services and particularly one institutional component - the hospital. To fully address the question of health services impact on the aged, however, one has to expand the analysis to a broader framework of health-related institutions and services. Due to various constraints, one must first evaluate the basic component providing care for the elderly - the nursing home facility. Initially the availability, accessibility, acceptability, appropriateness and quality must be evaluated in terms of the beds and services provided by the nursing homes. To begin this process, several formulas have been developed to assess the availability of beds. The Demand Method formula was selected by the Northwest Tennessee Comprehensive Health Planning Council which is most adaptable to the region.

$$\text{Bed Need} = \frac{(A)\ (B)\ (C)\ (D) + (E)\ (F)\ (G)\ (H)}{(I)\ X\ (J)}$$

A = total population males 65+

B = per cent males 65+ not married

C = per cent males 65+ with severe limitations

D = per cent males 65+ with severe limitations below poverty level and cannot afford nursing homes

E = total population females 65+

F = per cent females 65+ not married

G = per cent females 65+ with severe limitations

H = per cent females 65+ with severe limitations below poverty level and cannot afford nursing homes

I = per cent of actual nursing home users

J = the desired occupancy rate

The above formula will be used only as a guideline, thus allowing the use of national standards in lieu of using specific data. These standards will be used until at such time the specific statistics are available. Therefore, these mentioned national standards are:

B = 33% = per cent males 65+ not married

C = 26.8% = per cent males 65+ with severe limitations

D = 50% = per cent males 65+ with severe limitations below poverty level and cannot afford nursing homes

F = 67% = per cent females 65+ not married

G = 8.5% = per cent females 65+ with severe limitations

H = 50% = per cent females 65+ with severe limitations below poverty level and cannot afford nursing homes

I = 90% = per cent of actual nursing homes users (10% are assumed to be under 65+)

J = 90% = desired occupancy rate

After applying the national standards to the formula the following equation results:

$$\text{Need} = \frac{(\text{Males } 65+)\ (33\%)\ (26.8\%)\ (50\%) + (\text{Female } 65+)\ (67\%)\ (8.5\%)\ (50\%)}{90\% \times 90\%}$$

$$= (\text{Males } 65+)\ (.05) + (\text{Females } 65+)\ (.03)$$

The simplified equation applied to each county population 1974-1990 results in the following table.

Long Term Care Bed Need Using the Demand Method
November, 1975

Counties	Beds 1974	Bed Needs 1974	1980	1990
Benton	39	67	84	101
Carroll	91	146	171	204
Crockett	48	82	107	135
Dyer	121	154	189	223
Gibson	217	247	285	352
Henry	188	145	175	207
Lake	0	35	47	65
Obion	134	202	207	226
Weakley	182	170	181	189
TOTAL	1020	1248	1446	1702

Source: Northwest Tennessee Comprehensive Health Planning Council, November, 1975.

Elderly persons have established roots within specific communities. Their families and friends are primary persons with whom senior citizens want to keep in close contact. For this reason, those who need institutional nursing care seek nursing homes within a few miles of their friends and family. When a facility is available a definite trend developes. Residents of a particular county fill the beds of the nursing home built in their county. With this type of trend, especially in a rural area, the Council designated service areas for nursing homes as the county boundary in which each nursing home is located.

ADVANTAGES AND DISADVANTAGES OF LONG-TERM CARE FORMULA

While the long-term formula is admittedly difficult to use, it has the advantage of actually trying to predict the demand for beds in a given, unique area. It has the further advantage of data which is readily available over long time spans in the past (with the exception of poverty level data, since poverty level was not defined until the 1960's), and it can be used in an area which does not now have a long-term facility. In addition, if more detailed data on the occupants of such facilities in the area should become available in the future, the method could certainly be refined to take them into account.[10] One final disadvantage in this formula is the error of assuming national standards are totally true for a particular region; but until specific data is obtained, these standards must be applied.

REVIEW CRITERIA

In the preceding sections, formulas were presented to calculate possible parameters to indicate the need for future beds. Along with these, other criteria and guidelines need to be evaluated in order to resolve all the variables entering into the question.

The Tennessee Health Facilities Commission has established criteria. The Northwest Tennessee Comprehensive Health Planning Council elected to adopt these criteria, as well as develop additional guidelines. The General Criteria for Certificate of Need as established by the Tennessee Health Facilities Commission Rules are:

"In accordance with T.C.A. 53-5411, no Certificate of Need shall be issued unless the action proposed in the application for such Certificate is (1) necessary to provide required health care in the area to be served; (2) can be economically accomplished and maintained; and (3) will contribute to the orderly development of adequate and effective health care services. These criteria are further defined in the paragraphs below.

Need - The need for a proposed facility or service shall be evaluated by the reference to:

(a) existing areawide and State health plans;

(b) anticipated need and demand at the time of implementation of the proposal; and

(c) related circumstances of need identified during consideration of the application.

Economic Feasibility - The economic feasibility of a proposed facility or service shall be evaluated by reference to:

(a) availability of sufficient financial resources to promptly implement the proposal;

(b) the reasonableness of the anticipated cost of the proposal, in comparison to costs of similar proposals;

(c) operating revenue sources, including the probable level of patient charges;

(d) anticipated utilization levels;

(e) ownership and managerial strategies bearing on minimizing costs and maximizing economies, consistent with the desired quality and type of care; and

(f) related factors identified during consideration.

Contribution to Orderly Development of Health Care Services

The contribution which the proposal will make to the orderly development of an adequate and effective health care delivery system will be evaluated by reference to:

(a) the prior and subsequent availability of facilities and services that might duplicate or compete with the proposals;

(b) the positive and the negative effects attributable to the duplication or competition;

(c) accessibility to consumers and to related providers;

(d) availability of necessary supportive services, facilities and equipment;

(e) availability and sources of necessary personnel;

(f) the quality of the proposed facility or service in relation to applicable professional, governmental or legal standards; and

(g) related factors identified during consideration of the application.

In any future Certificate of Need application, the above criteria will be used in conjunction with these Council guidelines:

1. Trends in occupancy, last five years;
2. Expected population changes;
3. Expected manpower changes;
4. Changes in health care patterns;
5. Economic effects;
6. Nature of service area with reference to variety and complexity of services offered;
7. Changes in federal regulations as imposed;
8. Unnecessary duplication of facilities and services;
9. Changes in the utilization patterns;
10. Ability to assure public accountability;
11. Expected to lessen fragmentation in the health care system of the region;
12. Consumer acceptability;
13. The appropriateness of the new beds and/or services;
14. The clientele served, and;

15. Any related factors identified during consideration of the application.

Medical care has an important but only a peripheral effect on health in populations. Medicine has made many miraculous advances in recent decades, but the fact remains that increases in longevity and reductions in mortality depend to a major extent on improvements in the quality of the environment. Medical care is only a small part of the larger picture. Much of the vast progress in health status in the past century is the product of a higher standard of living and education, better sanitation, improved nutrition, and a variety of public health efforts; and many of the risks to health in the present are a product of man's constructed environments. Many major problems presently faced are the consequence of man's technologies, the styles of life, and social organizations man has developed. Although curative medicine has made and continues to make important contributions, much of the necessary health action required in the future involves larger social considerations and the development of new patterns of community organizations and preventive behavior.[11]

THE GOAL AND OBJECTIVES

The health care system is a vast industry which subsumes many groups with conflicting perspectives and interests. How these interests are weighed, negotiated, and resolved determines, in part, the organization of health services and the various priorities given to the different aspects of the health care for this region.

Researchers have discovered that with increased education and affluence, persons desire more - not less - services, and as they become better educated they demand more sophisticated services. In spite of this, priorities must be established and the medical services must be distributed in terms of need and not in terms of economic ability to command them. Failure to plan, the distribution of facilities and their services in some reasonable relationship to needs and overall benefits, will only increase social divisions and bitterness among men.

In this section of the plan, the Northwest Tennessee Comprehensive Health Planning Council indicates the goals, objectives, strategies, and indicators applicable to this health care delivery system. These goals address the questions of utilization, duplication, fragmentation, public accountability, accessibility, availability, acceptability, appropriateness, flexibility, continuity, and quality of the health services.

THE GOAL OF THE HEALTH FACILITIES PLAN

To ensure the availability of necessary medical facilities and services to all residents of the region at a reasonable cost.

THE OBJECTIVES OF THE HEALTH FACILITIES PLAN

A. OBJECTIVE

The public health units, the mental health centers, the area hospitals, clinics, and other health providers should immediatley coordinate the use of existing services and the planning for expanded services and facilities so as to avoid duplication of facilities and services by 1990.

1. STRATEGY

By July, 1976, the Council shall bring together the various interest groups in the area concerned with health care to establish a means of coordinating the use of and planning for facilities and services.

INDICATORS:

a. *The meeting is held by July, 1976.*

b. *Composition of membership in the meeting is representative of the various interests in the community including consumers.*

c. *Attendance of the members from such interests will be evaluated after the meeting.*

d. *Evidence of their impact on planning should be noted by July, 1976.*

e. *The existence after July, 1976 of a mechanism for continued coordinating the use of and planning for health facilities and services should be evident.*

2. STRATEGY

By July, 1976, distribute the health facilities plan and relevant supporting data to educate the health care interest groups regarding facilities and services.

INDICATORS:

a. *The Plan distributed by July, 1976.*

b. *The number and types of comments received by September, 1976.*

c. *The activity of interest groups to achieve coordination of existing services and facilities should have increased by September, 1976.*

B. OBJECTIVE

To obtain adequate distribution of nursing homes by 1990 throughout the entire region, thus ensuring the anticipated needs and demands for patient use are met.

1. STRATEGY

The Northwest Tennessee Comprehensive Health Planning Council shall, in applying the Tennessee Certificate of Need Legislation and this plan's formulas and guidelines, encourage by July, 1976, the continued dispersion of nursing homes so as to provide local citizens adequate access.

INDICATORS:

a. *The use of the Tennessee Certificate of Need Legislation, the formulas, and the recommendations of this plan the Facilities Committee in their review and comment on specific applications of Certificate of Need should be evident.*

b. *The location of nursing homes in comparison to the sixty-five and over density populations should be evaluated every two to five years.*

2. STRATEGY

Using this plan the Council shall, by July, 1976, identify priority areas in which additional nursing homes are needed and distribute this information to relevant providers.

INDICATORS:

a. *List of priority areas compiled and distributed by July, 1976.*

b. *Construction of nursing homes in areas of need by January, 1977, should begin.*

C. OBJECTIVE

Present and future hospitals will be encouraged to develop to a sufficient size, to achieve economic viability, to expand services, to be centrally located in a distributive pattern which will identify and develop a limited number of medical centers, and to attract an increase in manpower, so as to serve all

residents of the region by 1990.

1. STRATEGY

The Council should encourage the growth of the larger hospitals in their ability to provide services and the complexity of those services in the region by 1990.

INDICATORS:

a. *The activity of encouragement should begin by January, 1976.*

b. *The addition of more complex services should begin by September, 1976.*

2. STRATEGY

The Council shall conduct annual surveys to evaluate the growth, therefore, identifying trends in patient utilization, in hospital growth and in expansion of more sophisticated services by 1990.

INDICATORS:

a. *The identification of various growth trends by 1980 should be accomplished.*

b. *The addition of more complex services to facilities in comparison to the ascertained need by 1990 should be obtained.*

c. *The economic stability of facilities each year should be evaluated.*

d. *The actual development of major medical centers by 1980 should be accomplished.*

2. STRATEGY

The Northwest Tennessee Comprehensive Health Planning Council shall by January, 1976, lobby the Tennessee General Assembly for passage of legislation funding the Northwest Tennessee Region for resident training programs over the next ten years.

INDICATORS:

a. *The passage of legislation funding this region for resident training programs.*

b. *By 1992, graduates of residency programs should be practicing medicine in the region.*

4. STRATEGY

The Council shall, in applying the Tennessee Certificate of Need Legislation and this plan's formulas and guidelines, advocate and enforce proper distribution of hospitals and their services.

INDICATORS:

a. *Begin using the Tennessee Certificate of Need Legislation and this plan's formulas and guidelines by January, 1976.*

b. *Location of the facilities and services in comparison to the need, the population distribution and density.*

CONCLUSION

The Health Facilities Plan for Northwest Tennessee is based on the recognition that, while much is right with the current health care delivery system, the region can and should do better in rendering health care to its people. The basic premise underlying this plan is that there are enormous strengths in this health care delivery system. Improvements in the system should be brought about by building on these firm foundations, not by sweeping away the present system to make way for a radically new structure. At its best, this region as a part of this nation's health care system has long been capable of delivering medical care unsurpassed anywhere in the world. This high level of attainment is a reflection of two strong elements deeply rooted in American society: a commitment to individual and local initiative and diversity; and the ability of science and technology to help solve societal problems.

While these two elements are largely responsible for the health system's strengths, they have also contributed to some of its major problems: maldistribution of personnel and facilities; spiraling health care costs; and uneven quality of care.

The commitment to individual initiative and freedom has permitted the system to tolerate serious imbalances in

the distribution of the health resources. The tendency to focus on purely technological solutions to health care problems has created a climate in which the organizational and systematic aspects of health care have gone largely neglected. The pattern of increasing specialization has brought with it not only a heightened awareness of the processes affecting organ systems, but also in many instances a reduced awareness of the patient as a whole human being. The noncritical enthusiatic acceptance of new technologies into the health care arsenal, in combination with a general absence of attention to planning, has contributed to rising health care costs. Finally, the unwillingness to infringe on the freedom of health care providers has encouraged a general lack of accountability in the health care system, and this partly accounts for the uneven quality in health care.

These deficiencies cannot be ignored. Our society increasingly expects that everyone shall have access to quality health care, and the fact that resources are limited means that we must improve the efficiency and effectiveness of the system for delivering care.

The challenge is clear -- to develop the needed improvements while preserving the essential strengths of the system. We must find ways to enhance the planning and regulating abilities of the system without creating a monolith that destroys individual initiative and diversity; to pay more attention to the scientific base of the system; and to re-emphasize the human aspects of health care without abandoning the parallel commitment to special-

ization that enables the health care system to employ complex knowledge effectively.

The critical balance that must be struck in an improved health care system cannot be achieved unilaterally. It requires a new sense of cooperation and partnership between government and the private sector in which each does what it is best suited to do. In this view, it is the role of the Federal Government to support, demonstrate, do research and evaluate; but it is up to the private sector in health care, and the local governments to do the actual work of planning and operating this health care system. This partnership offers the best hope for preserving that which "liberty" and "equality" should mean in the health arena; individual freedom of choice and action, and equitable access to health care.

FOOTNOTES

[1] Northwest Tennessee Comprehensive Health Planning Council, Northwest Tennessee Comprehensive Health Plan, February, 1975, pp. 1.

[2] Ibid., pp. 2-4.

[3] U. S. Department of Labor, Bureau of Labor Statistics, Labor and Material Requirements for Hospitals and Nursing Home Construction, Bulletin No. 1691, (1971).

[4] Rogatz, Peter, M.D., "Excessive Hospitalization can be cut back," Journal of the American Hospital Association, (August 1, 1974) Vol. 48.

[5] Georgia - Tennessee Regional Health Commission, A Study of Acute Care Bed Need in 1980, July, 1974.

[6] Georgia - Tennessee Regional Health Commission, A Study of Acute Care Bed Need in 1980, July, 1974.

[7] Georgia - Tennessee Regional Health Commission, A Study of Acute Care Bed Need in 1980, July, 1974

[8] Hammerman, Jerome, "Health Services: Their Success and Failure in Reaching Older Adults," American Journal of Public Health, (March, 1974) pp. 253-256.

[9] Brody, Stanley J., "Evolving Health Delivery System and Older People," American Journal of Public Health, (March 1974) pp. 245-247.

[10] Georgia - Tennessee Regional Health Commission, A Study of Long Term Care Bed Need in 1980, July, 1974.

[11] Mechanic, David, Ph.D., "Ideology, Medical Technology and Health Care Organization in Modern Nation," American Journal of Public Health, (March, 1975) pp. 241-247.